

REMARKS

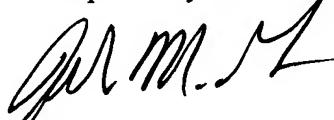
Claims 1-30 were pending in the application prior to this amendment. By this amendment, Applicants have amended claims 8, 10, 15 and 18-20 and have added new claims 31-41 in order to more particularly claim what they regard as their invention. Support for new claims 31-41 is found in paragraphs [027]-[033], [36], [37] and [43] of the written description and in Figure 6 of the drawings.

In the event that the Examiner finds any remaining impediment to the prompt allowance of this application, which could be clarified by a telephonic interview, the Examiner is respectfully requested to initiate a telephonic interview with the undersigned attorney.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "VERSION WITH MARKINGS TO SHOW CHANGES MADE".

Dated this 27th day of November 2002.

Respectfully submitted,



John M. Guynn
Attorney for Applicants
Registration No. 36,153

WORKMAN, NYDEGGER & SEELEY
1000 Eagle Gate Tower
60 East South Temple
Salt Lake City, Utah 84111
Telephone: (801) 533-9800
Facsimile: (801) 328-1707

JMG:cm

W:\7678\585\CM0000001733V001.doc

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

Paragraph [029] has been amended as follows:

One problem with existing dental instruments is that the LED or other light-generating source is typically housed within the main body of the dental instrument, thereby requiring a fiber optic light wand to channel the light from the dental instrument to the dental application site where the light-curable compounds are located. This is a problem because the fiber optic light wand is unable to capture much of the light that is emitted from the LED. The light that is not captured increases the heat in the dental instrument and thus requires intricate cooling systems and devices to prevent overheating of the dental instrument. To overcome this problem, the present invention provides an optical device 10 which captures light at a remote location, away from the main body of the dental instrument 14, at the end of an extension arm 12, as shown. According to this embodiment, LED 16 generates light at the end of the extension arm 12, away from the main body of the dental instrument 14. It will be appreciated that separating LED 16 away from the main body of the dental instrument 14 is useful for minimizing the heat that is generated within the main body of dental instrument 14. Separating the [light guide] optical device 10 away from the body of the dental instrument 14 is also ergonomically useful for enabling the dental practitioner to place the tip of the [light guide] optical device 10 into the mouth of the patient during dental procedures.

IN THE CLAIMS:

Claims 7, 10, 15 and 18-20 have been amended as follows:

7. (Twice Amended) An optical device as defined in claim 6, wherein the transparent shield protects the [aspheric] lens from making contact with light-curable compounds while allowing light from the light-generating source to pass through the shield.

10. (Twice Amended) An optical device as defined in claim 9, wherein the second end of the [aspheric] lens focuses light from the light-generating source into a column of light having a diameter of about 8 mm at a distance of about 3 mm to about 5 mm from the apex of the transparent shield.

15. (Twice Amended) An optical device as defined in claim 14, wherein the lens focuses the light entering the first end of the [aspheric] lens into a column of light having a diameter of about 8 mm at a distance of about 3 mm to about 10 mm away from the second end of the lens.

18. (Twice Amended) A light-generating and focusing assembly comprising:
a light-emitting diode;

a lens having a first end [that is substantially flat] and a second end [that is curved], wherein the first end is positioned so as to receive light from the light-emitting diode, and wherein the second end is configured so as to focus light received by the first end in a desired manner; and

a transparent shield configured so as to protect the lens from physical contact during use and so as to allow light to pass through the transparent shield.

19. (Twice Amended) A [L]light-generating and focusing assembly as defined in claim 18, wherein the lens and the transparent shield comprise at least one of glass, aluminum dioxide, sapphire, quartz, acrylic, polyacrylic, polypropylene, and silicone.

20. (Twice Amended) A [L]light-generating and focusing assembly as defined in claim 18, wherein at least a portion of the second end of the lens is aspheric and is at least one of hyperbolic, ellipsoidal, and parabolic.